



## SQL MASTER/VM

### SQL/DS DBA SUPPORT TOOLS

### RELEASE 1.1

**Program number 5684-136**

SQL Master/VM(PID 5684-136) is an IBM licensed program which works with the Structured Query Language/Data System (SQL/DS) licensed program to automate many of the manual Data Base Administrator functions required to support the SQL/DS data base within the VM/SP, VM/XA, or VM/ESA environments. SQL Master/VM automates DBA functions such as archiving, recovery, adding dbextents, deleting dbextents, adding dbspaces, startup, shutdown, startup parameter changing, dbspace level reorganizations (with candidate selection), table level reorganizations, table manipulation and redefinition, catalog index reorganizations, and data base monitoring. Each of these functions may be initiated immediately by an authorized user (local or remote), or they may be scheduled to execute at any specified date and time, or repetitive execution interval.

SQL Master/VM simplifies the task of supporting SQL/DS data bases by automating the complex manual steps required to perform many Data Base Administrator (DBA) activities. Using this product enables these functions to be scheduled and performed automatically during periods of low system usage, with little or no human interaction, improving the operational productivity of the entire system. This product also allows these functions to be performed in a consistent and repeatable manner with a high degree of security and control, thereby reducing or eliminating manual labor hours required to perform these functions.

Once the SQL Master/VM environment has been established, new SQL/DS data bases may be easily incorporated with little additional human resources. Due to the automated control provided by this product, the workload impact of additional SQL/DS data bases to Data Base Administrators can be minimized.

#### Highlights

##### Access Control

4 levels of authorization can be specified controlling access to and use of the SQL Master product. Additionally, these levels are customizable allowing unique user authorization requirements to be implemented.

##### Externalized Data Base Startup Parameters

All data base startup parameters are maintained by SQL Master and can be updated at any time by the Data Base Administrator using the SQL Master user interface. Modified parameters become operational during the next data base startup.

##### Local & Remote User Interface Capability

The SQL Master user interface was designed to communicate with multiple SQL Master machines, both locally on a single CPU and remotely to SQL Master machines on remote nodes. The SQL Master user interface provides both command mode and panel mode capabilities for maximum flexibility.

##### Database Operator Command Interface

SQL Master provides the DBA with the capability to perform all SQL/DS operator commands for a data base, either in command mode or through panel interface prompts. These functions include all SHOW commands, the FORCE command, COUNTER command, and RESET command.

##### Automated Archiving (All Logmodes Supported)

SQL Master supports archives under all logmodes. Special archive features supported by SQL Master include multi-volume data base archives (SQL/DS or User), multiple log archives between full data base archives, implicit full and log archives, and archives (log and full) to disk.



### **Automated Database Recovery**

SQL Master recovery functions provide the DBA with all available recovery sets derived from SQL/DS and/or User archive events, and enables the DBA to select which recovery set should be used and how the recovery set should be applied.

### **Handling of Logmode Changing**

SQL Master automatically handles all SQL/DS requirements of performing a logmode switch when the data base is started. This includes any coldlogs, archives, and log archives that are required to properly bring the data base back up with a new logmode.

### **Database Monitoring**

SQL Master can automate many of the periodic monitoring activities performed by the DBA via the SQL/DS operator commands. This feature can also be instructed to automatically react to detected conditions. For example, a DBA can enable a log check monitor that will check at scheduled intervals the space remaining in a database's log. If the monitor detects that an implicit archive is likely, then the monitor can schedule an explicit log archive for a convenient time in an effort to avoid a possible implicit archive during peak utilization time. SQL Master's database monitoring feature also has a report generation capability, which logs database monitor information each time a monitor runs.

### **DBSPACE Level Reorganizations**

SQL Master provides a data reorganization utility with the dual advantages of fast execution and high space savings through the DROP DBSPACE command. Execution options also allow for data to be moved within a data base (such as to a different storage pool or larger dbspace) or to a different data base (for migration or regen purposes). Externally stored dbspace data created during the reorganization process can be used for backup purposes. A PAUSE option allows the backup function to be utilized separately from reorganization.

### **DBSPACE Reorganization Candidate Selection**

A SQL Master capability analyzes an SQL/DS data base for data maintenance needs and optionally perform required data maintenance (data reorganizations) automatically.

### **Table Level Reorganization and Redefinition**

SQL Master also provides a table level reorganization capability with many options for maximum flexibility. A data-only reorganization option performs a DATAUNLOAD and DATALOAD without dropping the table, which eliminates the need for DBA authority. Additional options allow the table to be dropped and recreated, along with all associated indexes, views, and grants, and for tables to be moved or copied, either within a database or between databases.

Additionally, this function provides the capability to redefine a table definition, allowing columns to be deleted or column characteristics to be changed, including column names, column datatypes, and null attributes.

### **Event Scheduling**

This feature provides the capability to schedule concurrent or single threaded processing events against one or more databases. Detailed event control information provides the capability to establish dependencies between jobs, a dependency on database status (up or down), a dependency on a particular SQL/Master service machine, and a dependency on probable completion within a designated time window. This will allow for better control and automation of both Single User Mode functions (such as archiving and adding dbextents) and Multiple User Mode functions (such as DBSPACE reorganizations).

### **Programming Requirements**

SQL Master can operate in VM/SP, VM/XA, and VM/ESA environments.

SQL Master requires the following product;

- SQL/DS (5748-XXJ) Version 1 Release 3 or later

SQL Master/VM will work with this product and its subsequent releases and modification levels unless otherwise stated.

### **Documentation**

- SQL Master/VM Program Description/ Operations Manual, order number SC67-0205-01.